

## Research Article

DOI: 10.62046/gijams.2024.v02.i04.003

### Women's Knowledge, Attitudes and Practices Regarding Cervical Cancer Prevention at the Reference Health Centre in Bamako (Mali)

Sylla Cheickna<sup>1</sup>, Sanogo Siaka Amara<sup>1</sup>, Bocoum Amadou<sup>1</sup>, Fané Seydou<sup>1</sup>, Adiawakoye Adane<sup>1</sup>, Séma Kéita<sup>2</sup>, Dembele Sitapha<sup>3</sup>, Dao Seydou Z4, Tégueté Ibrahima<sup>1</sup>, Traoré Youssouf<sup>1</sup>, Mounkoro Niani<sup>1</sup>

<sup>1</sup>Department of Gynecology and Obstetrics of the Gabriel Touré University Hospital in Bamako, Mali

<sup>2</sup>Obstetrics and Gynecology Department of the Fana Reference Health Centre, Koulikoro, Mali

<sup>3</sup>Obstetrics and Gynecology Department of Kayes Hospital, Bamako, Mali

<sup>4</sup>Obstetrics and gynaecology department of the reference health centre of commune II, Bamako, Mali

\*Corresponding Author: Prof. SYLLA Cheickna | Received: 12.07.2024 | Accepted: 27.07.2024 | Published: 19.08.2024

**Abstract:** The aim was to assess women's knowledge, attitudes and practices regarding cervical cancer screening.

**Materials and methods:** We conducted a descriptive and analytical study at the Reference Health Center of Commune V of the District of Bamako. **Result:** The average age of women was 30 years. They were mostly married (81.79%), primigestes (50.17%), nulliparous (58.76%), uneducated (53.61%) and living in urban areas (62.80%). Most of the women had already heard of cervical cancer (79.90%). Only (8.59%) of women recognized STIs as a risk factor for cervical cancer and 44.70% knew that cervical cancer was preventable. Of the women surveyed, none had already been vaccinated and about 60% had never been tested. 15.46% of women wanted to get the vaccine soon, compared to only 8.59% now. 41.20% of women had already been screened, 36.40% of them wanted to do it now against 70.80% soon. 78% of women said they wanted to recommend screening to a relative. **Conclusion:** Most women have knowledge of its existence but their knowledge of risk factors and means of prevention is low. Their attitudes and practices are also weak.

**Keywords:** cancer, vaccination, screening, primigestes, nulliparous.

**Citation:** Sylla Cheickna<sup>1</sup> *et al.* Women's Knowledge, Attitudes and Practices Regarding Cervical Cancer Prevention at the Reference Health Centre in Bamako (Mali). Grn Int J Apl Med Sci, 2024 Jul-Aug 2(4): 129-140.

## INTRODUCTION

Cervical cancer screening is a public health action carried out on a population at risk, also known as the target population. The goal of screening is not to diagnose the disease, but to identify individuals who have a high probability of contracting or developing it [1]. Cervical cancer is the second most common cancer in the world after breast cancer. It is the fourth most common cause of cancer death (266,000 deaths in 2012) among women worldwide [2,3]. There are 528,000 new cases of cervical cancer each year. In Africa, there are extremely high rates of cervical cancer (more than 50/100,000 women) [4]. This high prevalence in Africa is linked to the level of development, including certainly the level of knowledge of the population on the means of preventing cervical cancer. In Cameroon in 2012, the Yaoundé cancer registry estimated the age-adjusted incidence at 107 new cases per 100,000 inhabitants, cervical cancer ranked second (13.8%) after breast cancer (18.5%) [5]. The population at risk of developing cervical cancer (UCC) in Cameroon is 6.74

million women aged 15 years and over. According to current estimates, every year 1993 women are diagnosed with cervical cancer and 1,120 die from it [6]. According to recent data from the Mali Cancer Registry, cervical cancer is the first female cancer, with a frequency of 26.6% and an incidence of 35.1 per 100,000 inhabitants [7]. In our countries, nearly half of cervical cancers are undiagnosed or are already incurable at the time of diagnosis [8]. The risk factors and means of prevention are known, and their control by the population would help to reduce its frequency. In France, the incidence and mortality rates of cervical cancer are constantly decreasing due to the widespread dissemination of early detection [9]. The current WHO strategy recommends starting screening with the HPV test whenever possible and continuing with visual inspections with acetic acid or lugol before continuing with smears and biopsies [10]. In addition, other studies have shown that the effectiveness of a screening program depends largely on the participation rate and the degree of adherence of the target women, and that this adherence depends on their knowledge, attitudes

and practices towards cervical cancer and its screening [11]. We set out to describe and analyze the knowledge, attitudes and practices of women of childbearing age on the prevention of cervical cancer at the reference health center of commune V of the District of Bamako in Mali.

### Objectives

The aim was to assess women's knowledge, attitudes and practices regarding cervical cancer screening.

## MATERIALS AND METHODS

This was a cross-sectional, descriptive and analytical study with prospective data collection from April 04 to July 20, 2022 at the reference health center of Commune V of the District of Bamako (Mali). The study focused on women who requested our service, regardless of the reason given, during the study period. **Sample size:** we calculated the sample from the formula applied to cross-sectional studies  $n = \frac{Z^2 \cdot p \cdot q}{d^2}$ ,  $n$  = sample size  $Z$  = reduced deviation from the normal distribution = 1.96 for  $\alpha = 5\%$   $\alpha$  = significance threshold  $P$  = Relative frequency of a measurable event on the question  $q$  = complementary probability with  $p = 1 - q$   $i$  = precision varies between 2% and 8% in general in medical studies.  $n = (1.96)^2 \times 5\% \times 2\% = 1 - 14\% \times 14\% \times 2\% = 219$ . **Inclusion criteria:** All women who came to consultations and or the companions of other women, aged 15 to 49 years, were included in this study, after informed consent. **Non-inclusion criteria:** Health care workers, women in emergency situations, those not belonging to the age group from 15 to 49 years old and those who refused to participate in the study were not included in our study. **The conduct of the survey:** After detailed explanations of the purpose of the study and also in order to reassure the women, we administered a pre-established questionnaire on their

knowledge, attitudes and practices in terms of cervical cancer prevention. **Data collection:** The source of the data was primarily based on information collected from women who met our inclusion criteria. **Data collection technique:** data were collected from a semi-structured questionnaire interviewing women after informed consent. All data were collected on the survey sheet in the form of quantitative (explained) or qualitative (explanatory) variables. We established the correlations between the variables from the statistical tests. **Data analysis and processing:** Statistical analysis will be carried out with SPSS software. For categorical (explanatory) variables were compared by the chi2 test (X2) or the Fischer test. Differences between continuous variables (explained) were analyzed by Student's test. A value of  $p \leq 0.05$  was considered statistically significant. **Variables studied:** We studied the following variables: women's socio-demographic profile, knowledge, attitudes and practices. **Ethical aspects:** Anonymity and confidentiality were respected throughout the study period.

## RESULTS

### Epidemiological aspects

The average age of women was 30 years with extremes of 15 and 49 years. In a little more than one out of two cases, it was primigeste. Just under one-third of the sample was nulliparous. The majority of women were married, 82%. More than one in 3 women lived in a polygamous diet. More than half of the women were uneducated. More than a third of the women came from an urban area, or 62.89%. Less than half of our women were using a contraceptive. More than a quarter of our women were passive smokers. Only 1% of women were postmenopausal. These epidemiological aspects are summarized in Figure 1, 2 and Table 1.

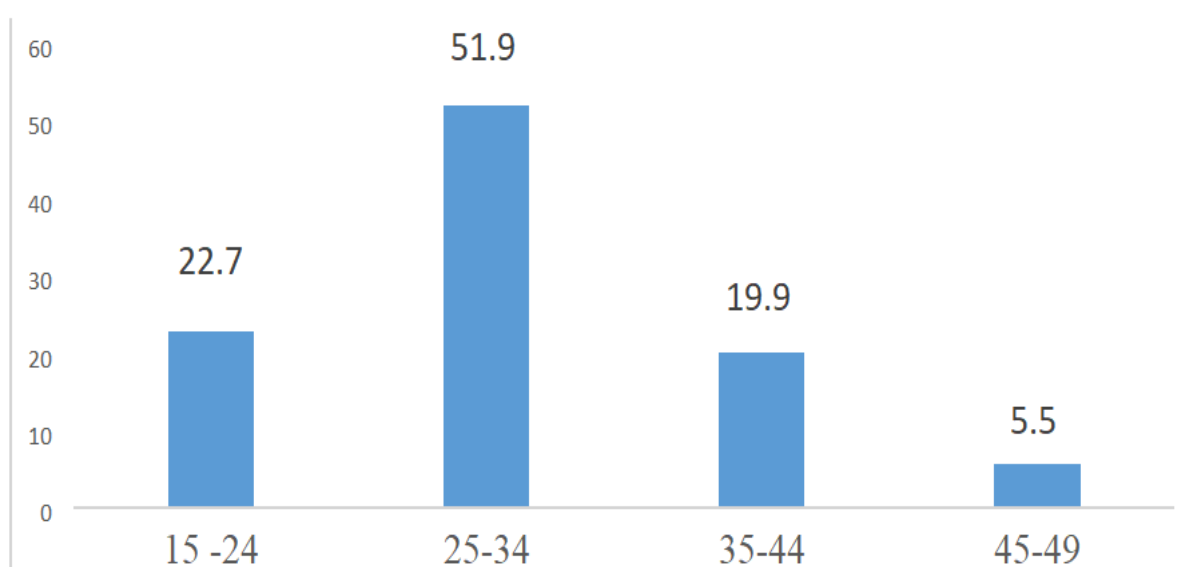
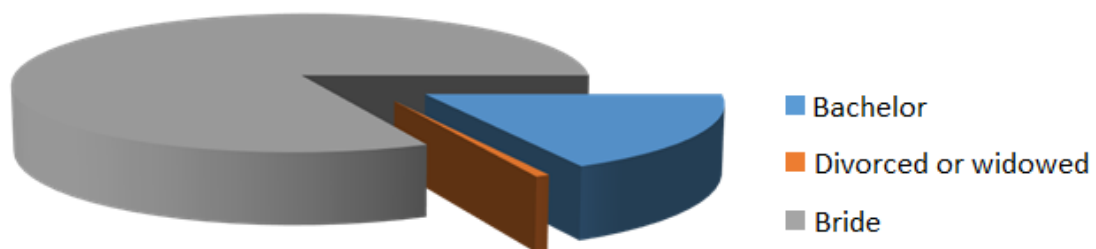


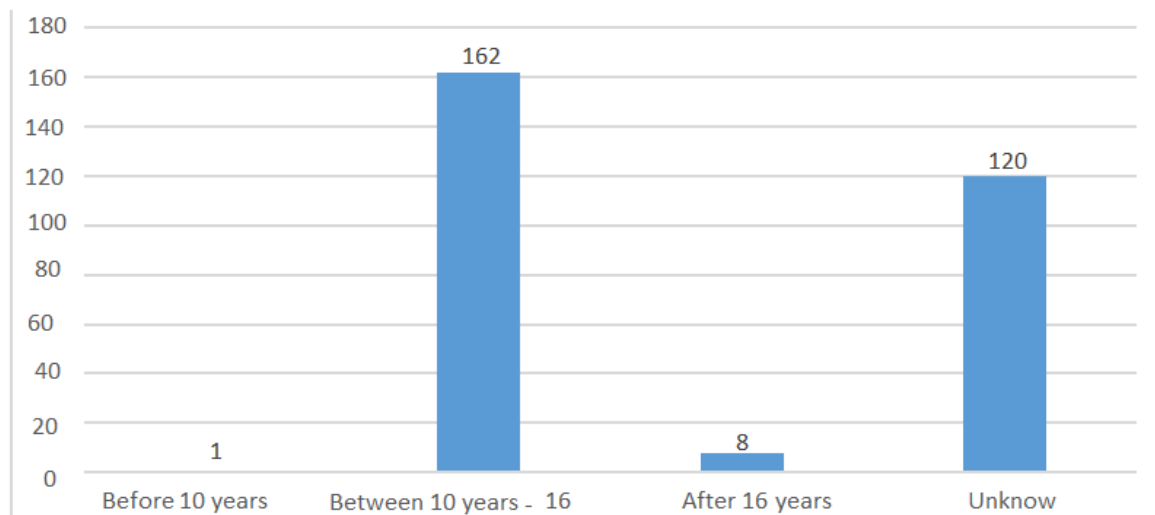
Figure 1: Distribution of women by age group in years

**Table 1: Distribution of women by pregnancy bracket**

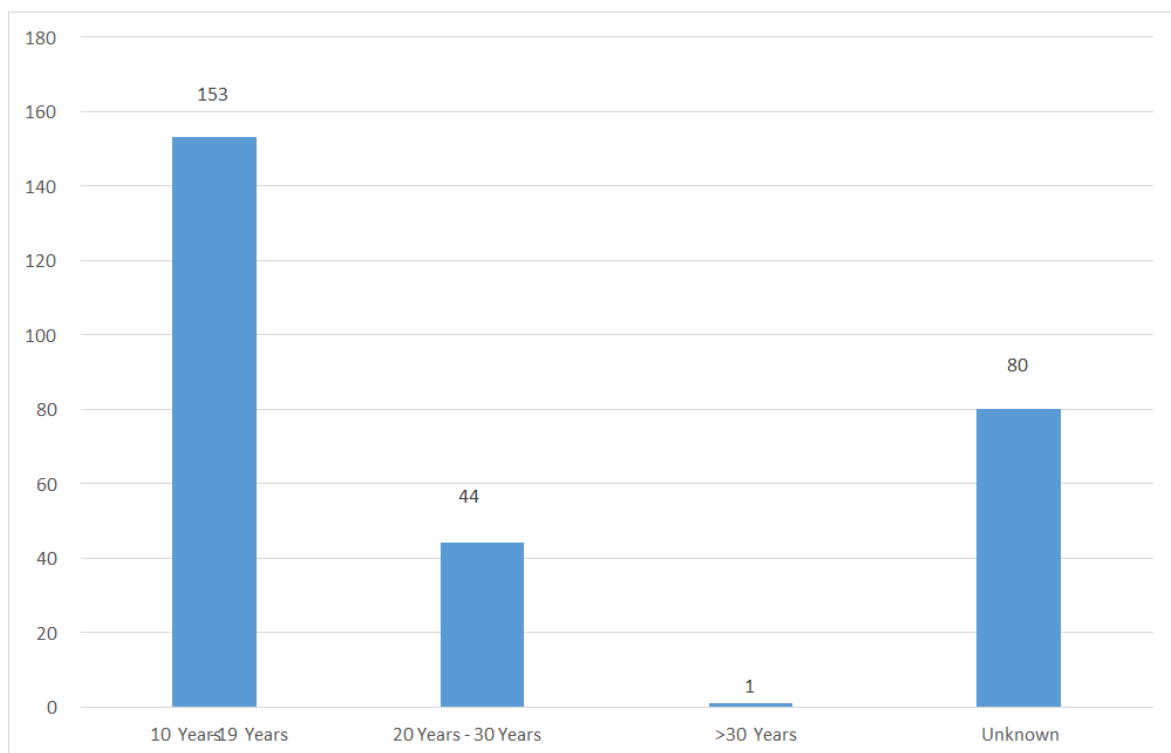
<b>Gesturity</b>	<b>Actual</b>	<b>Percentage</b>
Nulligeste	35	12,00
<b>Primitest</b>	<b>146</b>	<b>50,17</b>
Paucigeste	60	20,60
Paucigeste	60	20,62
Multi-gesture	50	17,23
<b>Parity</b>	<b>Actual</b>	<b>Percentage</b>
<b>Nulliparous</b>	<b>171</b>	<b>58,76</b>
Primiparous	32	10,99
Paucipare	43	14,77
Multiparous	45	15,48
<b>Polygamy</b>	<b>Actual</b>	<b>Percentage</b>
<b>Yes</b>	<b>190</b>	<b>65,29</b>
<b>Concept of education</b>	<b>Actual</b>	<b>Percentage</b>
Educated	135	46,39
<b>Not in school</b>	<b>156</b>	<b>53,61</b>
<b>Origin</b>	<b>Actual</b>	<b>Percentage</b>
<b>Urban</b>	<b>183</b>	<b>62,89</b>
<b>Rural</b>	<b>108</b>	<b>37,11</b>

**Figure 2: Distribution of women by marital status****Clinical aspects**

These clinical aspects are presented in Figure 3, 4, 5 and Table 2.



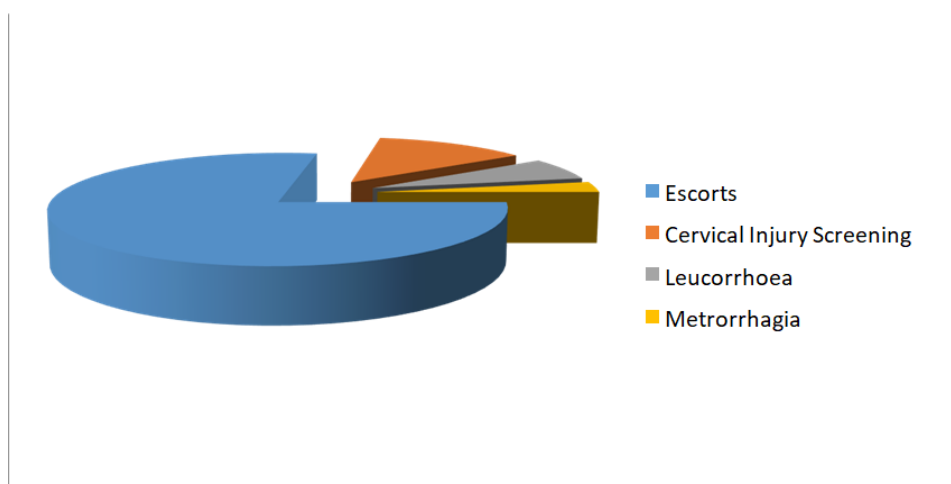
**Figure 3: Distribution of women by age at menarche**



**Figure 4: Distribution of women by age at first sexual intercourse**

**Table 2: Distribution of women by contraceptive use**

Contraception	Actual	Percentage
No	182	62,54
<b>Yes</b>	<b>109</b>	<b>37,46</b>
<b>Total</b>	291	100
<b>Passive smoking</b>	<b>Actual</b>	<b>Percentage</b>
No	236	81,10%
<b>Yes</b>	<b>55</b>	<b>18,90%</b>
<b>Total</b>	291	100,00%
<b>Menopause</b>	<b>Actual</b>	<b>Percentage</b>
No	288	98,97%
<b>Yes</b>	<b>3</b>	<b>1,03%</b>
<b>Total</b>	291	100,00%



**Figure 5: Distribution of women by reason for presence on CSRef at the time of recruitment**

### Women's knowledge of cervical cancer prevention

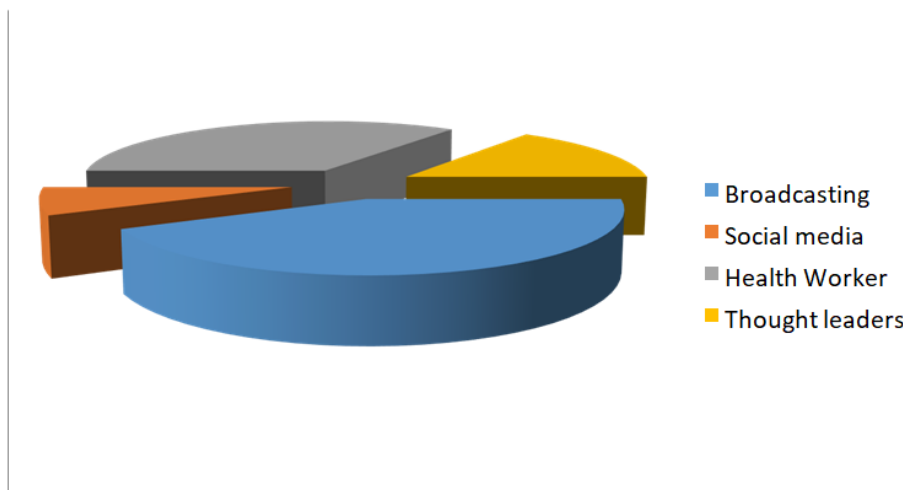
Almost 3/4 of our women have heard of cervical cancer. Nearly 8 out of 10 women did not know any risk factors for cervical cancer. There is no significant relationship between age and the fact that they want to advise a loved one to be screened. More than 40% of women found cervical cancer to be common. About 3/4 of women thought cervical cancer was serious. More than 1/3 of women knew that cervical cancer was preventable. About 40% of women knew the main target of HPV vaccination. Nearly 45% of women were unaware of the existence of an HPV vaccine. More than

1/4 of women were unaware of the availability of the vaccine in Mali. More than 64% of women did not say how much the HPV vaccine would cost. Just over a quarter of women found screening unpleasant. There is a statistically significant relationship between age at 1st sexual intercourse and knowledge about the possibility of preventing cervical cancer ( $p = 0.0283$ ). There was a statistically significant association between the notion of education and having heard of cervical cancer ( $p = 0.000$ ). Tables 3,4,5,6 and Figures 6,7,8,9,10,11,12,13,14,15 summarize the knowledge aspects.

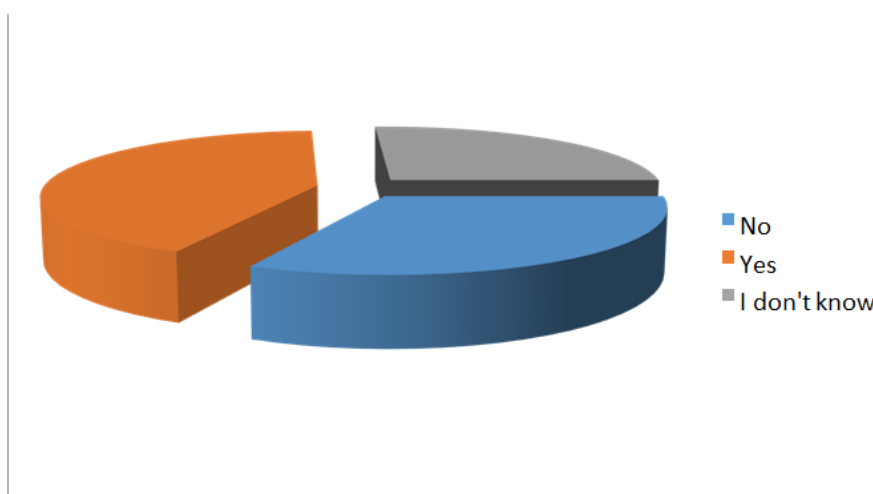
**Table 3 :** Distribution of women by whether or not they have heard of cervical cancer

Have heard about cervical cancer	Actual	Percentage
No	73	25,09
Yes	218	74,91
<b>Total</b>	291	100
Knowledge of cervical risk factors	Actual	Percentage
Tobacco	2	0,68
IST	25	8,59
Heredity	4	1,37
Multiparity	2	0,68
Multiple sexual partner	9	3,09
Sexual intercourse	17	5,84
Swarm Catch	1	0,34
Don't know	231	79,41
<b>Total</b>	291	100
Age	want to recommend screening to a loved one	
	No	Yes
15-24	56	10
25-34	114	37
35-44	46	12
45-49	11	5
<b>Total</b>	227	64

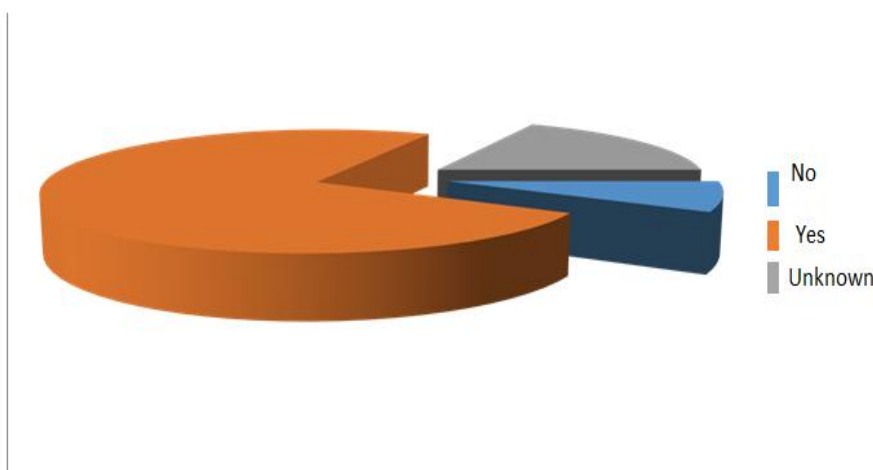
Khi = 3.2119; P value= 0.3601



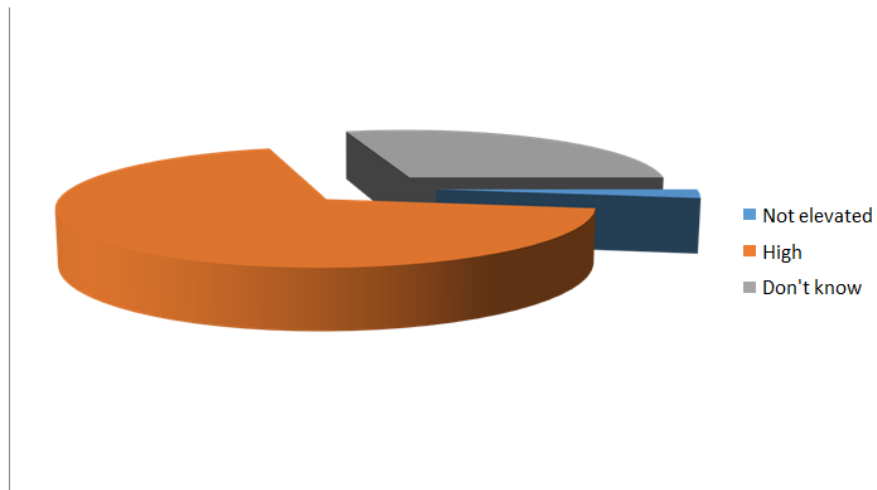
**Figure 6: Distribution of women by source of information about cervical cancer**



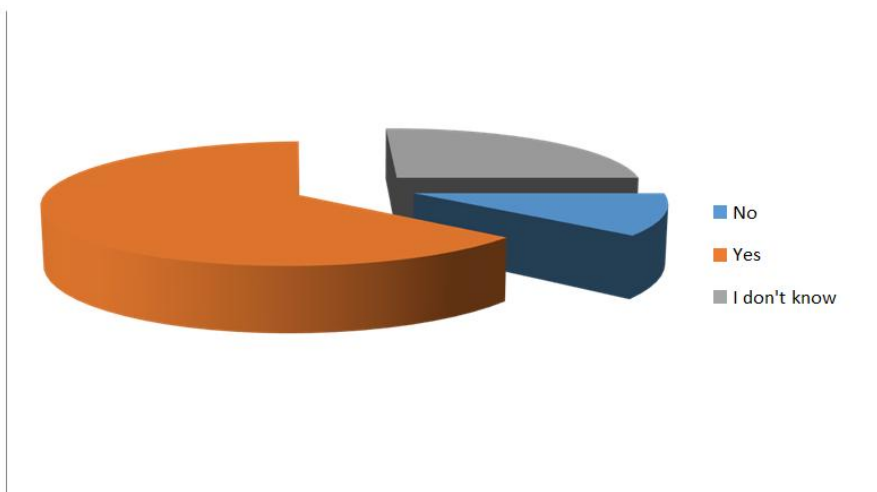
**Figure 7: Distribution of women according to their opinion on the frequency of cervical cancer**



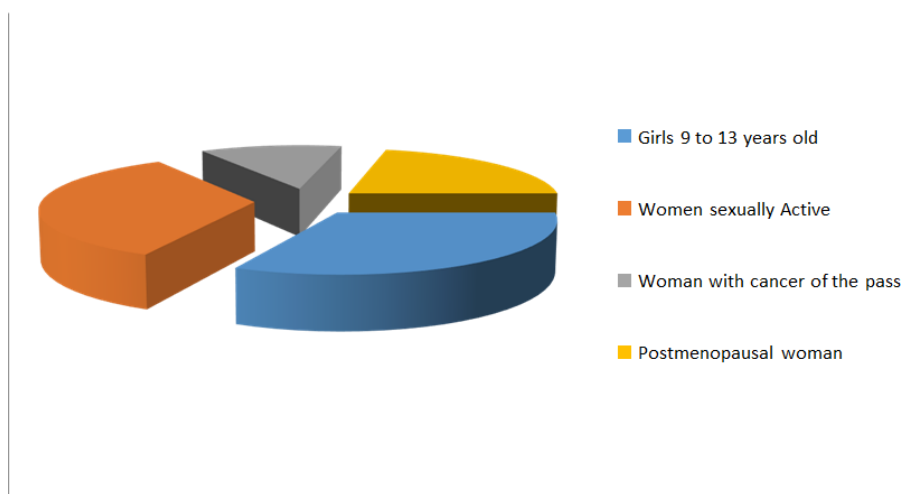
**Figure 8: Distribution of women according to their opinion on the severity of cervical cancer**



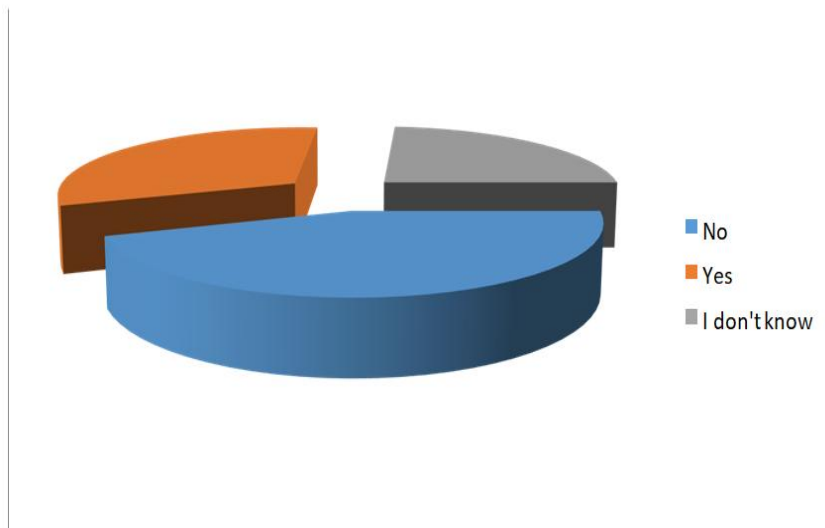
**Figure 9: Distribution of women according to the degree of lethality** Nearly 7/10 of women found cervical cancer to be fatal.



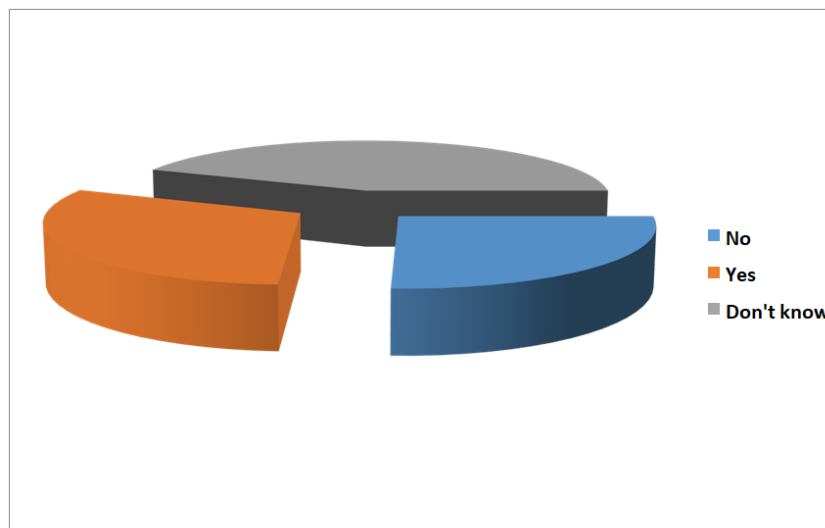
**Figure 10: Distribution of women according to their knowledge of the prevention of cervical cancer**



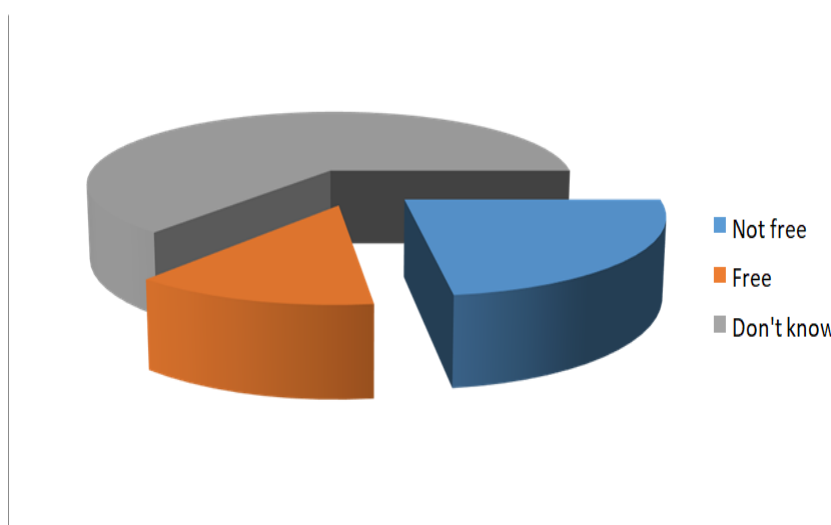
**Figure 11: Distribution of women according to their knowledge of the vaccination target**



**Figure 12: Distribution of women according to their knowledge of the existence of a vaccine**

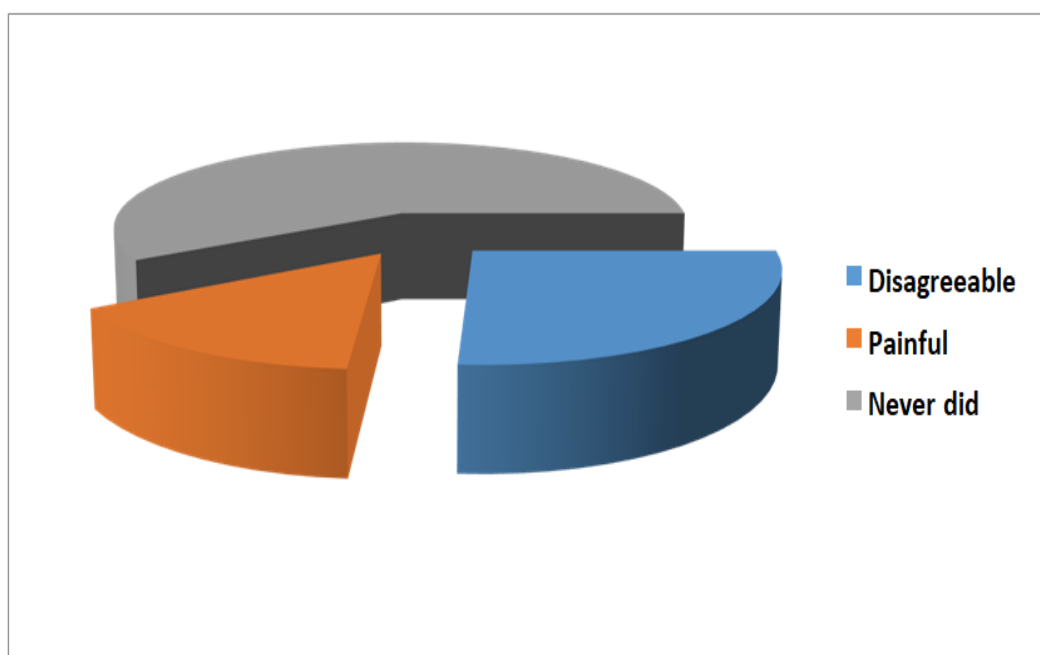


**Figure 13: Distribution of women by vaccine availability**



**Figure 14: Distribution of women according to their opinions on cost**





**Figure 15: Distribution of women according to their assessment of cervical cancer screening**

**Table 4: Relationship between education and hearing of cervical cancer screening**

Concept of instruction	Hearing about screening		Total
	No	Yes	
Uneducated	87	69	156
Educated	38	97	135
Total	125	166	291

Khi=22.5328; p value = 0.000

**Table 5: Relationship between age at first sexual intercourse and knowledge of the possibility of preventing cervical cancer**

Age (1 <sup>st</sup> intercourse sexual)	Possibility of preventing cervical cancer			Total
	No	Yes	Don't Know	
15 to 24	13	94	36	153
25 to 34	5	33	6	44
35 to 44	0	1	0	1
45 to 49	4	57	32	93
Total	32	185	74	291

Khi = 22.9296; p value = 0.028

**Table 6: Relationship between marital status and having heard of cervical cancer**

Marital status	Have heard of cervical cancer		Total
	No	Yes	
Bachelor	6	45	51
Bride	66	172	238
Divorced	1	1	2
Total	73	218	291

Khi = 6.3625; p value = 0.0415

#### Women's attitudes towards cervical cancer prevention:

No women had been vaccinated. Only 5.16% of women were ready to get vaccinated now. 36.10% of women were ready to be vaccinated soon. Nearly 60% of women had not yet been screened for cervical cancer. 41.20% of women had already been vaccinated. 36.4%

of women wanted to be screened now. 70.80% of women wanted to be screened soon. Only 22% of women wanted to recommend screening to a loved one. There was a statistically significant relationship between age and whether or not the woman had ever been screened ( $p=0.0126$ ). Attitudinal variables are presented in Table 7.



**Table 7: Variables concerning women's attitudes**

<b>Have you ever been vaccinated?</b>	<b>Actual</b>	<b>Percentage</b>
Yes	0	0
No	291	100
<b>Are you ready to get vaccinated now</b>	<b>Actual</b>	<b>Percentage</b>
Yes	15	5,16
No	276	94,84
<b>Are you ready to get vaccinated soon?</b>	<b>Actual</b>	<b>Percentage</b>
Yes	105	36,10
No	185	63,90
<b>Screening done at least once</b>	<b>Actual</b>	<b>Percentage</b>
Yes	120	41,20
No	171	58,80
<b>Do you want to get screened now</b>	<b>Actual</b>	<b>Percentage</b>
Yes	106	36,40
No	185	63,60
<b>Would you like to be screened soon?</b>	<b>Actual</b>	<b>Percentage</b>
Yes	206	70,80
No	85	29,20
<b>A Recommended screening to a loved one</b>	<b>Actual</b>	<b>Percentage</b>
No	227	78
Yes	64	22
<b>Age</b>	<b>Has already been screened</b>	
	Yes	No
15-24	14	47
25-34	49	97
35-44	31	22
45-49	26	5
Total	120	171

Khi = 11,850 ; p value = 0.0126

#### Aspects of women's practices in the prevention of cervical cancer

8.59% of women wanted to get vaccinated now.

15.46% of women wanted to be vaccinated soon.

16.84% of women wanted to be screened now. 61.86%

of women wanted to be screened soon. There is a statistically significant link between the notion of education and the fact of wanting to advise a loved one to be screened ( $p = 0.000$ ). The aspects of practices are summarized in Table 8.

**Table 8 : Aspects of women's practices regarding cervical cancer prevention.**

<b>Would you like to get vaccinated now</b>	<b>Actual</b>	<b>Percentage</b>
Yes	25	8,59
No	266	91,41
<b>Would you like to be vaccinated soon?</b>	<b>Actual</b>	<b>Percentage</b>
Yes	45	15,46
No	246	84,54
<b>Do you want to get screened now</b>	<b>Actual</b>	<b>Percentage</b>
Yes	49	16,84
No	242	83,16
<b>Would you like to be screened soon?</b>	<b>Actual</b>	<b>Percentage</b>
Yes	180	61,86
No	111	38,14
<b>Wanting to advise a loved one screening</b>		
	Yes	No
Uneducated	141	15
Educated	86	49

Chi = 30.0294; p value= 0.000



## DISCUSSION

### Epidemiological aspects

In our study, the mean age was 30 years with extremes of 10 years and 50 years. An average age of 32.8 years was reported successively by Rama DD [14] in Cameroon and Mbongo JA [1] in Congo Brazzaville. The bulk of our sample was made up of primigests (50.17%), nulliparous (58.76%), from urban areas (62.8%), married (81.79%) living in a polygamous diet without education (53.61%). Rama DD [14] reported that his sample consisted of singles and married people. In the same study, he reports that 58.92% of the women came from urban areas and 61.28% had a secondary education. In 55% of the women in our sample had first sexual intercourse between the ages of 10 and 19, only 37.46% had used a contraceptive method and 18.90% were subjected to passive smoking. In our sample; 77.66% were accompanying women.

### Descriptive and analytical aspects

#### Women's knowledge of cervical cancer prevention

Among the women interviewed; 74.90% said they had heard of cervical cancer. Rama DD [14] and Mbongo JA [1] reported 78.11% and 78.6% of women, respectively, to be aware of cervical cancer. This similarity can be explained by the fact that the sociodemographic characteristics were almost the same as those in our study. In our study, 32.99% as in that of Mbongo JA [1], 46.6%, the first source of information was the media (radio and television), unlike the Rama DD study [14] where the first source of information was health facilities. We noted that social networks, health workers, opinion leaders served as sources of information in 5.5%, 26.80% and 11.78% respectively. In our study, 79.40 of the women reported not knowing any factor, Rama DD [14] reported that 58.59% did not know any risk factor. In our study (8.59%) as well as that of Rama DD [14] (44.72%), the most well-known risk factor was sexually transmitted infections (STIs). This low frequency in our study could be related to a high number of uneducated women in our sample. Assoumou SZ [15] reported in his study that among women with at least one risk factor for cervical cancer 7.72% cited HPV, this result is almost similar to that of Assoumou SZ's research [15] in Gabon where 8.8% of women were aware of HPV. In a study done in Australia where national HPV vaccination and HPV information program were available, this study showed that 88.9% of women had knowledge about HPV [16]. The primary prevention of cervical cancer through vaccination has begun in our country and it is already becoming interesting to raise awareness among the population by letting them know that the first risk factor for cervical cancer is HPV. This information is necessary for the success of a vaccination campaign. In our study; 44.70% of women were aware of the existence of cervical cancer prevention methods compared to 39.73% in the Rama DD study [14]. Awareness of the existence of the vaccine was found in

6.19% of our women compared to 7.63% [14]. In our sample, 30.58% of women were aware of the availability in Mali and 43.64% had no opinion on the availability of the vaccine in Mali, 12.71% said that the vaccine was free and 23.02% found it not free.

In our study, 28.86% of our women knew that screening was a means of prevention, 75.95% found it important but found it unpleasant 26.10% and painful 15.12%. In the Mbongo JA study [1], 90.3% found screening painful. The essential elements of screening, such as the cervical cancer screening schedule, the cost of screening have been misunderstood by the women of Mr. Bongo JA [1]. We did not find a statistically significant link between age and the fact that they wanted to recommend screening to a loved one ( $p=0.3601$ ).

However, we found a statistically significant association between age at 1st sexual intercourse and knowledge of the possibility of preventing cervical cancer ( $p=0.0283$ ). The same is true for marital status and hearing about cervical cancer ( $p=0.0415$ ), the notion of education and hearing about screening ( $p=0.000$ ), the notion of education and the fact of wanting to advise screening to a loved one ( $p=0.000$ ).

#### Women's attitudes towards cervical cancer prevention

Among the women surveyed, none had been vaccinated against cervical cancer, only 5.16% are ready to do this vaccination now and 36.10% later. In our work, nearly 60% of women never had a screening; 36.40% wanted to do so now and 70.80% later. Thus, 78% of them wanted to advise a loved one to be screened. In the study of Mbongo JA [1]; 95.1% of women had never been screened and 43.7% intended to do so. We found a statistically significant relationship between age and whether or not the woman had ever been screened for cervical cancer ( $p=0.0126$ ).

#### Women's practices in the prevention of cervical cancer

In our workforce, 15.46% of women want to be vaccinated against cervical cancer in the near future and only 8.59% now. In our work, 36.42% of women had already wanted information on the prevention of cervical cancer, compared to 31.31% reported by Rama DD [14]. In a study done in Cameroon 26.94% of women said they had already had the initiative to be screened for cervical cancer, the main motivation was the health staff 75% [14]. Mbongo JA [1] reported that 56.3% of women wanted to be screened now compared to 59.2% who wanted to do so soon. In our study, 41.20% had already been screened for cervical cancer, 36.40% of women wanted to do it now and 78% soon. There was a statistically significant relationship between the notion of education and the desire to advise a loved one to be screened ( $p = 0.000$ ).



## CONCLUSION

Cervical cancer is a major public health problem in Mali. Most women have knowledge about its existence, but their knowledge of risk factors and means of prevention is low. Their attitudes and practices are also weak.

**Conflict of interest:** none.

## REFERENCES

1. Mbongo JA, Mahoungou F, Nguesso NI, Gombet Koulimaya CE and Iloki LH. Women's knowledge, attitudes and practices in cervical cancer screening. *International Journal of Current Research* Vol. 9, Issue, 02, pp.46153-46156, February, 2017.
2. Badet-Phan A, Moreau A, Colin C, Canoui-Poitrine F, Schott-Pethelaz, Flori M. Obstacles to cervical cancer screening encountered by doctors.
3. Bouslah S, Soltani MS, Ben Salah A, Sriha A. 2014. Knowledge, attitudes and practices of Tunisian women in breast and cervical cancer screening. *Psycho-Oncology* 8(2):123-32. *Collar. Carcinol Prat Afrique* 2005; 6 (N0 special): 24-30.
4. Contandouopoulos AP, Champagne F, Deis JL, Pineault R. 1993. Evaluation in the field of health. Concepts and methods. *Bulletin* 33(1):12-7. Cervical cancer screening and prevention. Update of the practice framework for the periodic health examination (PE). Haute Autorité de Santé 2013.
5. Dunnigan L. 1995. "Certain health behaviours specific to women". Quebec Ministry of Health and Social Services. CAIRN – Info.
6. Mbongo JA, Peko JF, Iloki LH. Precancerous lesions of the cervix: colposcopic concordance at the University Hospital of Brazzaville. *Med Afr Black* 2015; 62 (11):516-20.
7. Traoré C B, Coulibaly B, Kamaté B et al. Cancer in Bamako from 2006 to 2010; data from the cancer registry. *Rev.Afr.de pathol.*2012 6M; 11(1): 3-8.
8. Chirenje Z M, Chipato T, Kasule J, Rusakaniko S, Gaffikin, Blumenthal P, Sanghvi V. Visual inspection of the cervix as a primary means of cervical cancer screening: results of a pilot study. *Central African journal of medicine*; 1999; 2 (45): 30-33.
9. Mousonego. Cervical cancer prevention: Contribution of screening, recent progress and prospects. *Med Press* 2007; 36:92-111.
10. Nsondé Malanda J, Buambo SF, Thouassa A, et al. O'Hair, H.D., Kreps, G.L., Spark, L. 2007. *Editors Handbook communication and cancer care*, Gresskill NJ Hampton Press. Public Health Agency of Canada (2009). *Monitoring the Performance of Cervical Cancer Screening Programs in Canada*, WWW.phac-aspc.org.ca
11. Sankarnarayanan R, Ramani M D S, Wesley, MD. Practical guide for the visual screening of cervical neoplasia. IARC Technical Report 41, Lyon, France.2003.
12. Traoré S. Screening for Intraepithelial Neoplasia of the Cervix by Visual Inspection with Acetic Acid and Lugol. (About 4632 women screened in the district of Bamako). Thesis of Med. Bamako 05-M-13.
13. Rama Djouedjon Dakenyo, Bruno Kenfack, Noël Vogue, Eva Fomo Tsakoué, Maurice Ela Ebode, Samuel Nambile Cumber. Knowledge, attitudes and practices of women of reproductive age in the Mifi Health District on cervical cancer prevention, Cameroon. *International Journal of Current Research* vol, 9, Issue, 02. pp.46153, February, 2017.
14. Assoumou SZ, Mabika BM, Mbiguino AN, Mouallif M, khattabi A, Ennaji MM. Awareness and knowledge regarding of cervical cancer, pap smear screening and human papillomavirus infection in gabonese women. *BMC women's health* 2015 Apr .19; 15:37. Pub Med/google scholar
15. Giles M, Garland S.A. Study of women's knowledge regarding human papillomavirus infections, cervical cancer and human papillomavirus vaccines. *Aust New Zeal J Obstet Gynecol.* 2006; 46(4):311-5. Pub Med/Google Scholar.
16. Kéita D. Knowledge, attitudes and practices of women regarding cervical cancer screening at the Reference Health Center of Commune VI of the District of Bamako, Mali. Medical thesis 2018 USTTB.

